

Amendment and Response

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Serial No.: 10/770,797

Confirmation No.: 1476

Filed: February 3, 2004

For: COMPOSITIONS AND METHODS FOR REMOVING ETCH RESIDUE

Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1-26. (Canceled)

27. (Currently Amended) A composition for use in integrated circuit fabrication, the composition comprising:

at least one fluoride ion source comprising an organic cation; and

at least one organic solvent,

wherein the composition is a cleaning composition, is in contact with a substrate having a polymeric etch residue on at least one surface, and is free of water.

28. (Original) The composition of claim 27 wherein the fluoride ion source includes F^- ions or HF_2^- ions.

29. (Original) The composition of claim 27 wherein the fluoride ion source includes a cation selected from the group consisting of an organoammonium cation, a pyridinium cation, a quaternary organophosphonium cation, a quaternary organoarsonium cation, a quaternary organostibonium cation, a triorganocarbonium cation, and an organosulfonium cation.

30. (Original) The composition of claim 27 wherein the fluoride ion source includes a quaternary ammonium fluoride.

31-32. (Canceled)

33. (Currently Amended) The composition of claim ~~[[31]]~~ 27 wherein the composition is effective to remove at least a portion of the etch residue.

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34. **(Currently Amended)** The composition of claim 27 wherein the substrate is
~~composition is in contact with~~ a semiconductor structure ~~having an etch residue on at least one~~
surface.
35. **(Original)** The composition of claim 34 wherein the composition is effective to remove
at least a portion of the etch residue.
36. **(Currently Amended)** The composition of claim 27 wherein the substrate is
~~composition is in contact with~~ a semiconductor structure ~~having an etch residue on at least a~~
~~portion thereof and comprising a layer comprising at least a portion of exposed metal.~~
37. **(Original)** The composition of claim 36 wherein the composition is effective to remove
at least a portion of the etch residue and substantially none of the exposed metal.
38. **(Currently Amended)** A composition for use in integrated circuit fabrication, the
composition comprising:
 at least one fluoride ion source comprising an organic cation; and
 at least one organic solvent,
wherein the composition is a cleaning composition effective to remove etch residue, is in contact
with a substrate having a polymeric etch residue on at least one surface, and is free of water.
39. **(Original)** The composition of claim 38 wherein the fluoride ion source includes F⁻ ions
or HF₂⁻ ions.
40. **(Original)** The composition of claim 38 wherein the fluoride ion source includes a
cation selected from the group consisting of an organoammonium cation, a pyridinium cation, a
quaternary organophosphonium cation, a quaternary organoarsonium cation, a quaternary
organostibonium cation, a triorganocarbonium cation, and an organosulfonium cation.

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41. **(Original)** The composition of claim 38 wherein the fluoride ion source includes a quaternary ammonium fluoride.

42. **(Currently Amended)** A composition for use in integrated circuit fabrication, the composition consisting essentially of:

at least one fluoride ion source comprising an organic cation; and

at least one organic solvent,

wherein the composition is a cleaning composition and is in contact with a substrate having a polymeric etch residue on at least one surface.

43. **(Original)** The composition of claim 42 wherein the fluoride ion source is present in the composition in an amount of no greater than about 1.0 wt-%.

44. **(Original)** The composition of claim 42 wherein the fluoride ion source is present in the composition in an amount of no greater than about 0.5 wt-%.

45. **(Original)** The composition of claim 42 wherein the fluoride ion source is present in the composition in an amount of no greater than about 0.1 wt-%.

46. **(Original)** The composition of claim 42 wherein the fluoride ion source is present in the composition in an amount of no greater than about 0.01 wt-%.

47. **(Currently Amended)** A composition for use in integrated circuit fabrication, the composition consisting of:

at least one fluoride ion source comprising an organic cation; and

at least one organic solvent,

wherein the composition is a cleaning composition and is in contact with a substrate having a polymeric etch residue on at least one surface.

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48. **(Original)** The composition of claim 47 wherein the fluoride ion source includes F^- ions or HF_2^- ions.

49. **(Original)** The composition of claim 47 wherein the fluoride ion source includes a cation selected from the group consisting of an organoammonium cation, a pyridinium cation, a quaternary organophosphonium cation, a quaternary organoarsonium cation, a quaternary organostibonium cation, a triorganocarbonium cation, and an organosulfonium cation.

50. **(Original)** The composition of claim 47 wherein the fluoride ion source includes a quaternary ammonium fluoride.